

margine apicali, pedibusque flavis; alis hyalinis, venis fusco-ferrugineis.

♀. Mari similis; macula flava sub ocellis, segmento dorsali secundo flavo, macula parva nigra utrinque, 3-5 basi anguste nigris, sexto nigro macula flava apicali utrinque; alæ anticæ thoracis latitudine duplo et dimidium longiores.

Long., ♂ ♀, 16 mm.

♂. Clypeus strongly convex, labrum flattened, no carina between the antennæ; seventh, eighth, and ninth joints of the flagellum spined beneath, apical joint curved, truncate at the apex, no longer than the penultimate. Anterior femora unarmed, intermediate femora very obscurely serrate; anterior tarsi normal, the basal joint with six spines; intermediate tibiæ and tarsi normal. Second ventral segment with a strong tubercle acute at the apex; sixth ventral segment with a slightly raised triangular area; seventh dorsal segment closely punctured, narrowly rounded at the apex, the sides with short, stiff, black pubescence. Median cell of the hind wing emitting two veins from the apex, the lower vein ill-defined. Head and thorax thickly clothed with grey pubescence.

♀. Middle of the second ventral segment shining, with deep sparse punctures; sixth dorsal segment subtriangular, very narrowly rounded at the apex, closely punctured, with stiff setæ on the sides, subcarinate longitudinally in the middle.

*Hab.* S. Africa, Willowmore (*Dr. H. Brauns*), January and February.

The seventh ventral segment of the male has a median longitudinal carina.

This seems to be nearest to *capicola*, Handl., though differing in the armature of the ventral segments of the male, the shape and sculpture of the seventh dorsal segment, and in other smaller details.

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XLII.—*On Fabricius's Types of Odonata in the British Museum (Natural History).* By HERBERT CAMPION.

AS far as I am able to ascertain, the British Museum Collections include fourteen Dragonflies which have been described or determined by Fabricius. All but two of them came in Sir Joseph Banks's Collection of insects, which was presented by the Linnean Society in 1863. Although the welfare of

the collection necessitated its removal from the large and ornate cabinet in which it was then contained, it has fortunately remained intact and separate from the main collections of the Museum.

With regard to the identification-labels relating to these historical specimens, an attempt has been made to determine, by the character of the handwriting itself, whether Fabricius was the author of all or any of them. Through the good offices of Mr. J. H. Durrant I have been able to examine the caligraphy of two holograph letters written by Fabricius in Paris in 1805. Although both were produced in the same year, there is a considerable difference between them in style and even in the formation of letters—a fact which makes it all the more difficult to distinguish Fabricius's hand from other writing of the same period. At the same time, these labels are in two different styles of writing, at least, and the two styles may even be detected upon the same label. Nevertheless, I think it may be assumed that most, if not all, of the drawer-labels in the Banks Collection are the work of Fabricius himself. The case of the pin-labels in the General Collection is much clearer, as they correspond exactly, both in form and caligraphy, with the labels attached to certain undoubted Fabrician types of Coleoptera to which Dr. C. J. Gahan has kindly called my attention.

#### I. SPECIMENS IN THE BANKS COLLECTION.

The twelve Banksian dragonflies, which nominally represent as many species, are in a fair state of preservation, and, with the exception of those labelled *Libellula carolina*, *Æshna grandis*, *Agrion virgo*, and *A. linearis*, are the types of species described by Fabricius at various dates. Five of these are the types of nominal species merely, the valid species represented by their types being *Libellula* [*Neurothemis*] *stigmatizans*, *L.* [*Ithythemis*] *notata*, and *Agrion* [*Sapho*] *ciliata*. Certain other types referred to by Fabricius as being in the Banksian Collection are not now to be found there, and I am unable to learn anything concerning their fate. The missing insects are *Libellula bifasciata* (=? *Libellula lydia*, Drury, ♀), *L. variegata* (= *Palpopleura lucia*, Drury, ♀), and *Æshna variegata*. As regards the last-named, the British Museum register of accessions expressly mentions *Æshna variegata*, from Tierra del Fuego, as being in the Banksian Collection at the time of its acquisition by the Museum (1863). In 1887 McLachlan knew of its disappearance, and wrote, "In order to save disappointment,

I state that it no longer exists in Mus. Banks, and has probably been long ago destroyed" (Ent. Mo. Mag. xxiv. p. 77). It is unlikely now that the obscurity which surrounds the identity of this species, as well as the history of the type, will ever be cleared up.

No fewer than five of the specimens under consideration have obviously incorrect habitats assigned to them in Fabricius's writings. These are *Libellula equestris* (= *Neurothemis tullia*, Drury), *L. ferruginata* (= *Crocothemis servilia*, Drury), *Æshna grandis* (= *Æschna cyanea*, Müll.), *Agrion ciliata* (= *Sapho ciliata*, F.), and *A. linearis* (= *Mecistogaster linearis*, F.). Of course, lapses of this description were not at all infrequent at a time when little or no importance was attached to the facts of geographical distribution.

Below each insect stands a large oblong drawer-label, with a double black border, bearing the name of the genus and species, as well as a reference to the published description. The labels applying to *Libellula stigmatizans*, *L. oculata*, and *L. carolina* have a portion of the reference printed in—*i. e.*, "Fab. Entom. p." in the case of the two first-named, and "Linn. S. N. p." in the case of the last-named. The only pin-labels of any description are four tickets marked with the British Museum registration number, and five modern-looking tickets bearing the name of the reputed country of origin. Three manuscript genus-labels, dividing the collection into the genera *Libellula*, *Æshna*, and *Agrion*, may also be of post-Fabrician date.

In considering the specimens *seriatim*, Fabricius's original diagnosis of each of the eight types may be usefully quoted, but for our present purposes his more detailed descriptions need not be consulted, and will therefore be omitted.

- (1) *Libellula stigmatizans*, F. ♀. Type.  
(= *Neurothemis stigmatizans*, F., ♀.)

*Labels*:—"Libellula stigmatizans Fab. Entom. p. 421, n. 5"; square white ticket, "Australia," printed; round blue ticket, "<sup>63</sup>/<sub>47</sub>"

*Diagnosis*:—"L. flavescens, alis macula apiceque fuscis: stigmatate niveo. Habitat in nova Hollandia. Mus. Bankianum."—F., Syst. Ent. p. 421, no. 5 (1775).

This specimen and the next were examined by De Selys, and were identified by him as the ♀ and ♂ respectively of a single species (Ann. Mus. Civ. Genova, xiv. pp. 292, 293; 1879). Although he adopted the name of the ♂ (*oculata*) as that of the species, the modern rule respecting page-

precedence requires the application to the species of the first name written by Fabricius (*stigmatizans*).

- (2) *Libellula oculata*, F. ♂, juv. Type.  
(= *Neurothemis stigmatizans*, F., ♂.)

*Labels*:—" *Libellula oculata* Fab. Entom. p. 421, n. 6"; square white ticket, "Australia," printed; round blue ticket, "63"  
47."

*Diagnosis*:—" *L. flavescens*, alis anticis apice, posticis margine aqueis: stigmatate niveo. Habitat in nova Hollandia. *Mus. Bankianum*."—F., Syst. Ent. p. 421, no. 6 (1775).

Fabricius's additional words, "Præcedenti [*L. stigmatizans*] nimis affinis, cujus forte mera varietas," are worthy of note.

See also the remarks under (1) *L. stigmatizans*, above.

- (3) *Libellula indica*, F. ♀. Type.  
(= *Rhyothemis variegata*, Linn.)

*Label*:—" *Libellula indica* Fabr. Sp. Ins. No. 8."

*Diagnosis*:—" *L. alis flavo fuscoque variis apice albis, posticis macula baseos cyanea. Libellula Arria. Drury Ins.* 2. tab. 46. fig. 1. Habitat in Coromandel. *Mus. Dom. Banks*."—F., Spec. Ins. i. p. 521, no. 8 (1781).

The most noticeable difference between *Rhyothemis variegata variegata* and *Rh. variegata arria*, the Indian and Chinese forms of this variable species, is one of size, and in this respect our type undoubtedly belongs to the smaller Indian form, the abdomen measuring 20.5 mm. and the hind wing 30.5 mm.

- (4) *Libellula notata*, F. Type.  
(= *Rhyothemis notata*, F.)

*Labels*:—" *Libellula notata* Fabr. Mss. Ins. n. 19"; oblong white ticket, "Sierra Leone," written.

*Diagnosis*:—" *L. alis planis nigris: maculis apiceque albis. Habitat in Sierra Leon Africae Mus. Dom. Banks*."—F., Mant. Ins. i. p. 337, no. 19 (1787).

This type is a normal specimen of the West-African species figured and described by Ris as the true *notata* of Fabricius (Coll. Selys, Libell., fasc. xv. p. 959, pl. vii.; 1913). The abdomen is missing, and the sex has not been definitely determined, although the wing-pattern rather indicates a male. The hind wing measures 26 mm.

- (5) *Libellula equestris*, F. ♂. Type.  
(= *Neurothemis tullia*, Drury.)

*Labels* :—" *Libellula equestris* Fabr. Sp. Ins. No. 20"; square white ticket, "Africa," written.

*Diagnosis* :—" *L. alis dimidiato nigris, fascia media nivea. Habitat in Africa æquinoctiali. Mus. Dom. Banks.*"—F., Spec. Ins. i. p. 523, no. 20 (1781).

This insect agrees very well with Drury's figure of his *Libellula tullia*, adult ♂, from Bombay (Ill. Ex. Ent. ii. pl. xlv. fig. 3; 1773). That figure, however, fails to show the transverse white band in the wings, and is also a little larger than Fabricius's type, the hind wing measuring 22 mm., as compared with 21 mm. In our type the last antenodal is continuous in both fore wings. The reference to Africa is, of course, a mistake, as the genus *Neurothemis* is entirely unknown from that continent.

- (6) *Libellula marginata*, F. ♂. Type.  
(= *Palpopleura lucia*, Drury.)

*Labels* :—" *Libellula marginata* Fabr. Sp. Ins. No. 24"; square white ticket, "Africa," written; round blue ticket, "63,"  
47.

*Diagnosis* :—" *L. alis nigris, anticis macula apicis, posticis margine albis. Habitat in Africa æquinoctiali. Mus. Dom. Banks.*"—F., Spec. Ins. i. p. 523, no. 24 (1781).

Comparing this specimen with the plate of coloured figures of *Palpopleura lucia* in Ris's monograph of the Libellulinae (Coll. Selys, Libell., fasc. ix. pl. i.), we find that the pattern of the fore wing is intermediate between the first and second of those figures, while that of the hind wing is something between the second and third figures.

- (7) *Libellula ferruginata*, F. ♂. Type.  
(= *Crocothemis servilia*, Drury.)

*Label* :—" *Libellula ferruginata* Fabr. Sp. Ins. No. 11." The specific name was written originally "ferruginea," and was altered subsequently to "ferruginata."

*Diagnosis* :—" *L. alis basi flavescentibus, corpore obscure ferrugineo. Habitat ad Cap. Bon. Spei. Mus. Dom. Banks.*"—F., Spec. Ins. i. p. 521, no. 11 (1781).

*L. ferruginata*, F., has been erroneously identified with the common African species *Crocothemis erythraea*, Brullé, because the Cape of Good Hope was stated to be its habitat. This

locality, however, is manifestly a wrong one, as Fabricius's type clearly belongs to the Asiatic form *Crocôthemis servilia*, Drury, 1773. This is shown by the abdomen, which is parallel-sided and devoid of mid-dorsal black spots, and by the wings, which are narrow and rather smoky at the tips. The abdomen measures 27.5 mm. and the hind wing 34 mm. There are  $11\frac{1}{2}$  antenodals in each fore wing. Drury's figure of *Libellula servilia*, from China (Ill. Ex. Ent. i. pl. xlvii. fig. 6; 1770), agrees fairly well with the type of *L. ferruginata*, the main points of difference being that the abdomen is too long and that the coloured area at the base of the fore wings is too large. In 1793 (Ent. Syst. ii. p. 380) Fabricius treated his *L. ferruginata*, as well as *L. servilia*, Drury, as synonyms of his *L. ferruginea*. In the original description of *L. ferruginea*, 1775, the habitat was given as "America," but in 1793 the habitat was changed to "China."

(8) *Libellula carolina*, Linn. ♂.  
(= *Tramea virginia*, Ramb.)

*Label* :—" *Libellula carolina* Linn. S. N. p. 504. n. 17."

The base of the abdomen is in poor condition, the contents having apparently been eaten out by mites, and the hamules have disappeared. Nevertheless, the character of the basal spot in the hind wing is sufficient to show that the insect is not the North-American *Tramea carolina*, Linn., but the Chinese species now known as *Tramea virginia*, Ramb. This Chinese species is usually referred to as *Tramea chinensis*, De Geer, but, as a case of homonymy is involved, Dr. Ris (Coll. Selys, Libell. fasc. xvi. (1) p. 978; 1913) has recently restored to it Rambur's name of *virginia*. Re-examination of Rambur's type has revealed its Asiatic origin, notwithstanding that author's erroneous citation of its habitat as "Amérique septentrionale" (Ins. Névr. p. 34; 1842).

(9) *Æshna grandis*, Linn. ♂.  
(= *Æschua cyanea*, Müll.)

*Label* :—" *Æshna Grandis* Fabr. Sp. Ins. No. 2."

*Reference* :—" *A. thorace lineis quatuor flavis, corpore variegato. Habitat et in Insulis Sandwichii Mus. Dom. Banks.*"—F., Mant. Ins. i. p. 339, no. 2 (1787).

In this passage, which is quoted *in extenso*, Fabricius proposes to extend the distribution of *Æ. grandis*, as given in his earlier writings, so as to include the Sandwich Islands. The locality is not repeated in Fabricius's list of 1793, and



is, of course, entirely erroneous. The insect is, in fact, a ♂ of the common European species *Æschna cyanea*, Müll., which was not recognized as a distinct species until 1764. It seems to have been confused by many of the older entomologists with *Æ. juncea*, Linn., or even, as in the present case, with *Æ. grandis*, Linn.

(10) *Agrion ciliata*, F. ♀. Type.  
(= *Sapho ciliata*, F.)

*Labels*:—"Agrion ciliata Fabr. Sp. Ins. No. 3"; round blue ticket, "<sup>63</sup>/<sub>47</sub>"

*Diagnosis*:—"A. viridi ænea, abdomine fusco, pedibus ciliatis nigris. Habitat in Coromandel. Mus. Dom. Banks."—F., Spec. Ins. i. p. 528, no. 3 (1781).

Concerning this specimen De Selys wrote thus:—"J'ai reconnu notre espèce dans l'exemplaire type de l'*Agrion ciliatus* mâle, de Fabricius, qui existe encore heureusement dans la collection de Joseph Bancks, déposée à la Société Linnéenne de Londres. Dans ses ouvrages, Fabricius indique par erreur *Coromandel* comme la patrie du *ciliatus*, mais j'ai examiné avec soin l'exemplaire type sous le rapport de la réticulation, et je me suis assuré qu'elle est en tout conforme à celle des individus de *Sierra Léone*" (Monogr. Calopt. p. 60, 1854). Fabricius's type, however, is not a male, as stated by De Selys, but a small example of the female sex. The abdomen is 41 mm. in length and the hind wing 37 mm.

(11) *Agrion virgo*, Linn. ♂.  
(= *Calopteryx splendens*, Harr.)

*Label*:—"Agrion Virgo Fabr. Sp. Ins. p. 526. n. 1."

This is the common European species *Calopteryx splendens*, Harr., which was regarded by Linnæus as merely a form of *C. virgo*. Fabricius apparently adopted the same view, and never recognized Harris's action in 1782 in separating the two forms specifically.

(12) *Agrion linearis*, F. ♂.  
(= *Mecistogaster linearis*, F.)

*Label*:—"Agrion Linearis Fabr. Sp. Ins. No. 5."

This specimen is not the type, the species having been described in 1776 from material in the possession of Dr. Fothergill. The type cannot now be traced, and in its absence it is impossible to say precisely what Fabricius's species may be.

In 1781 he identified it with *Mecistogaster lucretia*, Drury, and some colour is lent to this identification by the fact that both species were described from Fothergill's collection. Drury stated that his *lucretia* came from the Cape of Good Hope, while Fabricius gave India as the habitat of his *linearis*; but, of course, *Mecistogaster* is exclusively a Neotropical genus. Whatever may be the identity of the Fabrician type, the species in the Banks Collection is quite distinct from that figured by Drury. The specimen before us was examined by De Selys, and referred by him to the species which he described as *M. linearis*, F. (Bull. Acad. Belg. (2) x. p. 22, 1860). A note appended to that description may be usefully quoted here:—"L'exemplaire de la collection Banks à Londres, qui passe pour avoir été étiqueté par Fabricius, est un mâle de cette espèce, à ptérostigma brun (semi-adulte). Les figures de Drury et de Sulzer, citées à l'appui dans l'*Entomologia systematica*, sont au contraire la *lucretia*. Quant à la description de Fabricius, elle peut s'appliquer aux deux espèces. Si l'on devait prendre le *linearis* de Fabricius pour synonyme de *lucretia* (nom plus ancien), il faudrait adopter pour notre espèce *linearis* le nom de *tullia*, de Burmeister."

## II. SPECIMENS IN THE GENERAL COLLECTION OF THE BRITISH MUSEUM.

In 1793 (Ent. Syst. ii.) Fabricius referred to three dragonflies in the British Museum Collection. These were *Libellula trimaculata*, De Geer (= *L. lydia*, Drury), p. 374, no. 3; *L. sinuata* (= *Palpopleura lucia*, Drury), p. 378, no. 17; and *L. vibrans*, p. 380, no. 30. The first is involved in much obscurity, and the second has not been traced at all, but *L. vibrans* has been identified with certainty. Unlike the Banksian insects, the two Fabrician specimens now in the General Collection carry a plain buff pin-label, with the two upper corners cut off, and bearing the name of the species in Fabricius's handwriting.

(1) *Libellula lata*, F. ♀.  
(= *L. lydia*, Drury, ♀.)

Label:—"Libellula lata Fab."

Apparently this name was never published, and the only reference to it which I can find is one contained in an interleaved and annotated copy of Linnæus's 'Systema Naturæ' (ed. xii.). This book is preserved in the British Museum



(Natural History), but the authorship and date of the supplementary descriptions with which it abounds are unknown to me. Several manuscript additions to the genus *Libellula* have been made, and among them is the following:—

“lata. LIB. alis planis hyalinis fascia maculaque baseos nigro-fusca, abdomine carinato glauco.  
Mscr.\*  
Hab. in Pennsylvania, Marylandia, Carolina.”

These words, however, while agreeing sufficiently well with the male of *L. lydia*, do not apply to the Fabrician specimen, which is a female of that species.

There seems to be some reason for believing that *Libellula bifasciata*, F., usually identified with *L. pulchella*, Drury, may be, in reality, the ♀ of *L. lydia*, Drury. The last-named insect is very different in its wing-markings from its corresponding ♂, which is undoubtedly the *L. trimaculata* of De Geer and Fabricius, but is very like *L. pulchella*, and especially the ♀ of that species. It is true that in 1793 Fabricius identified his *L. bifasciata*, 1775, both with Drury's figure of *L. pulchella* and also with Petiver's figure (*Gazophylacium*, i. pl. xv. fig. 2) of what is clearly intended for *L. lydia*, ♀. This is, however, evidently a case of confusion, due to the similar appearance of the two insects, and the difference in size was overlooked. But it is a very significant fact that Fabricius compares both *bifasciata* and *trimaculata*, in respect of build and size, with *L. depressa*, Linn., and it may be more natural to look upon them as the ♀ and ♂, respectively, of the same species, *L. lydia*, than to regard *bifasciata* as *L. pulchella*, which is decidedly larger than *L. depressa*, and *trimaculata* as *L. lydia*, ♂, which is rather smaller than *L. depressa*.

The fact that the specimen under consideration undoubtedly belongs to *trimaculata*, and is the only one of the kind in the British Museum which possesses any label in Fabricius's handwriting, would lead one to suppose that it is really the type of his description of that species. But this view of the matter seems to be negatived, both by the description itself, and by the two figures (De Geer, *Mém. Ins.* iii. pl. xxvi. fig. 2, and Petiver, *Gazoph.* i. pl. xv. fig. 1) cited in illustration of it, all of which apply to the male sex alone.

(2) *Libellula vibrans*, F. ♀. Type.

*Labels*:—“*Libellula vibrans* Fab.”; “Georgia.”

*Diagnosis*:—“*L. alis planis albis: macula media atra*

apicibusque ferrugineis. Habitat — — Mus. Britann."—F., Ent. Syst. ii. p. 380, no. 30 (1793).

Although Fabricius did not indicate any locality for this type, it nevertheless carries a small round label inscribed "Georgia." The fact that the written surface of the label had been placed in direct contact with the pectus of the dragonfly no doubt led to its being overlooked. The specimen is in an unusually good state of preservation, and the measurements are as follows:—Abdomen 39.5 mm., hind wing 49 mm., pterostigma 7 mm. In the fore wings the triangles are 3-celled, the subtriangles are 6-celled, and the antenodals number from  $16\frac{1}{2}$  to 18. At the base of each wing a dark line in the subcostal space reaches nearly to the third antenodal. The nodal spot on all wings is small, and no markings of any kind lie between that spot and the pterostigma. The brown apical cloud on all wings is small, not reaching inwards much beyond the distal end of the pterostigma.

XLIII.—*A new Vole from Palestine.*

By OLDFIELD THOMAS.

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IN 1913 the British Museum received as a donation from Mr. N. Charles Rothschild six voles from Ekron, south-east of Jaffa, and these were provisionally put down as *Microtus syriacus*, Brants.

Inquiry was, however, made of Prof. Matschie as to certain details of the type of that species, and with the help of his account I am now able to recognize that the Ekron vole is distinct and should be described as new.

*Microtus philistinus*, sp. n.

Like *M. lydius*, Blackler, but bullæ larger.

Size and general colour above quite as in *M. lydius*, the back sandy brown, rather more buffy than Ridgway's "buffy brown." Sides more buffy, but not so strongly as in *lydius*. Under surface washed with buffy, more so than in *lydius*, in which the ends of the hairs are greyish white, less so than in *guentheri*. Hands and feet buffy fawn. Tail as long as in *lydius*, longer than in *guentheri*; its upper surface terminally distinctly blackened, which is not the case in *lydius*; its lower surface pale buffy—white in *lydius*.